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ABSTRACT

This is a report of a conference held to discuss maintaining peace in outer space. Nineteen space specialists participated in the conference. Topics discussed were recent technological developments, international cooperation for peaceful uses of outer space, prevention of weapons in space, and the future role of the United Nations. The report's conclusion states that the space age is moving away from the era of spectaculars. Although manned space flights still occur, the more routine applications of space technology to earth systems have a more direct effect on our lives. Similarly, the space age has moved from an era of seemingly insurmountable technical problems to a time when human, economic, and political issues may pose the greatest impediments to space progress. Chief among these is the lack of national will to assign high priority to managing space matters. Recommendations of the conference include the following: (1) Governments need to devote more resources to peaceful uses of space; (2) All nations need to assess their national needs and priorities regarding space; (3) Further study needs to be conducted of ways to apply advanced technology to basic needs; (4) United States-Soviet talks on antisatellite and other space weapons should be resumed; (5) Attempts should be made to reduce institutional rivalries, a problem that exists throughout the United Nations; and (6) Funding for the UN Secretariat's Outer Space Affairs Division (OSAD) should be increased. (RM)

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Maintaining Peace in Outer Space

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Seventeenth Conference on the

United Nations of the Next Decade

Cooperstown, New York USA June 19-24, 1982

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Maintaining Peace in Outer Space

The Stanley Foundation
Report of the Seventeenth
United Nations of the Next Decade Conference
Convened June 19-24, 1982
in Cooperstown, New York USA

Summary of Recommendations

The space age is moving away from the era of the spectaculars. While exciting manned space flights still occur, it is the more routine applications of space technology to earth systems that have a direct effect on our lives.

Similarly, the space age has moved from an era when huge technical problems seemed insurmountable to a time when human, economic, and political issues may pose the greatest impediments to space progress. Advances in space technology have raised new, previously undreamed of, controversies between peoples and nations on earth. Space offers great opportunities to improve the human condition; it also presents new dangers.

Meeting in the quiet village of Cooperstown, New

York, USA, 19 space specialists were able to escape the daily pressures of their jobs for an informal, but concentrated, discussion of these issues. After a review of recent technological developments and some tentative predictions for the next decade, the group moved to the questions of international cooperation for peaceful uses of outer space, preventing weaponization of space, and finally, the future role of the United Nations in space management.

Following are brief excerpts from the major sections of the discussion. Background and rationale for each recommendation are provided in the rapporteurs' report that begins on page 19.

International Cooperation for Peaceful Uses of Outer Space

The Second UN Conference on the Exploration and Peaceful Uses of Outer Space, UNISPACE 82, scheduled for August 1982 offers the opportunity to consider the needs of the whole world as they relate to space. Participants urged nations to seize the opportunity. There was clear consensus that UNISPACE 82 should not be the end of the road in working toward peaceful uses, but rather a time for rededicated efforts to realize the potential benefits of space. Among the suggestions for UNISPACE 82 and beyond:

1. Governments need to devote more resources to peaceful uses of space. UNISPACE 82 can act as a springboard for inspiring governments to devote more financial and human resources to the peaceful uses of outer space.

2. All nations need to assess their national needs and priorities regarding space. In 1985 and 1987 the International Telecommunication Union (ITU) will hold a world conference at which time allocations of the radio frequency spectrum with regard to the geostationary orbit will be determined for the next twenty years. UNISPACE 82 should urge delegates to carry home the message that now is the time to begin planning for the ITU conference.

3. Further study needs to be conducted of ways to apply advanced technology to basic needs.

4. More attention should be devoted to controlling space junk. UNISPACE 82 should encourage the design of launch and space vehicles that leave less debris.

Preventing Weaponization of Outer Space

Given the dangers posed by weaponization of space, there was strong sentiment for quick resumption of bilateral as well as multilateral arms control talks. Several suggestions were proposed on how to prevent space weaponization:

1. Agreements are needed to confirm nonaggression in space and to ban development, testing, and deployment of arms directed against space systems on earth and in space.
2. Many nations are not party to a number of arms control agreements, including the limited test ban, the Non-Proliferation Treaty, the outer space treaty, and the moon treaty which have implications for space. Nonparty nations should be pressed to join, while simultaneous efforts are made to negotiate new agreements.
3. UNISPACE 82 should include discussion of the threat posed by weaponization without diverting the conference focus from the peaceful uses of space.
4. The Committee on Disarmament (CD) and the UN Committee on Peaceful Uses of Outer Space (COPUOS) should meet jointly to discuss weapons in space. There was consensus that such a proposal would speed up the negotiating process.
5. The General Assembly may want to strengthen machinery—even to the point of establishing a special group—to deal with disarmament in space.
6. US-Soviet talks on antisatellite and other space weapons should be resumed.

Future Role of the United Nations

All participants agreed that COPUOS and its Legal and Scientific and Technical Subcommittees should remain the focal point of UN activities in space. High marks for efficiency were given to the UN Secretariat's Outer Space Affairs Division (OSAD).

Several suggestions were offered on ways to improve the effectiveness of COPUOS, OSAD, and the various specialized agencies that deal with outer space matters.

1. Funding for OSAD should be increased.
2. Attempts should be made to reduce institutional rivalries, a problem that exists throughout the United Nations.

3. Every effort should be made to fill vacancies with technically qualified people. Special attention should be given to finding people who have had practical experience in applying space technology.

4. The work of the Legal and Scientific and Technical Subcommittees should be examined to ensure that they support but do not duplicate each other's efforts.

5. Small working groups, perhaps meeting independently of the Subcommittees, might be useful.

6. The Scientific and Technical Subcommittee needs to be strengthened.

7. The consensus rule, used by COPUOS and its Subcommittees, though difficult at times, should continue as the primary way of doing business or be amended only after very careful consideration.

8. Some procedure needs to be established so that, when all efforts to reach agreement have failed, an item can be removed from the committees' agenda.

The Stanley Foundation
420 East Third Street
Muscatine, Iowa 52761 USA
Telephone 319-264-1500

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Participants

Conference Chairman

C. Maxwell Stanley, President, The Stanley Foundation

Participants

Peter Bormann, Senior Advisor to the Secretary-General, UNISPACE 82

Carlos Antonio Bettencourt Bueno, Deputy Permanent Representative of Brazil to the United Nations

John Carver, Chairman, Scientific and Technical Subcommittee, UN Committee on the Peaceful Uses of Outer Space; Research School of Physical Sciences, The Australian National University

Lorne Clark, Director of Legal Operations Division, Department of External Affairs, Canada

Sune Danielsson, Head of Section, Ministry of Foreign Affairs, Sweden

Hasjim Djalal, Deputy Permanent Representative of Indonesia to the United Nations

Stephen Doyle, Director, Advanced Planning, Aerojet Liquid Rocket Company, Sacramento, California, USA

Gerald Helman, US Coordinator for UNISPACE 82

Peter Jankowitsch, Chairman, UN Committee on the Peaceful Uses of Outer Space; Permanent Representative of Austria to the OECD

Gordon Law, Senior Policy Analyst, Office of Technology Assessment, US Congress

Robert MacQueen, Director, National Center for Atmospheric Research, High Altitude Observatory, Boulder, Colorado, USA

John Martin, Assistant Head, Energy, Science, and Space Department, United Kingdom

Wilfred Mellors, Head of Washington DC Office, European Space Agency

Yash Pal, Secretary-General, UNISPACE 82

Kenneth S. Pedersen, Director of International Affairs, US National Aeronautics and Space Administration (NASA)

Qiu Yingjue, First Secretary, Political and Security Affairs, Permanent Mission of the People's Republic of China to the United Nations

Marcia Smith, Specialist, Aerospace and Energy Systems, Science Policy Research Division, Congressional Research Service, US Library of Congress

Richard Stanley, President, Stanley Consultants, Inc.; Vice President, The Stanley Foundation, Muscatine, Iowa, USA

Kosta Tsipis, Co-Director, Program in Science and Technology for International Security, Department of Physics, Massachusetts Institute of Technology, Cambridge, Massachusetts, USA

Rapporteurs

Jeff Martin, Radio Project Director, The Stanley Foundation

Anita DeKock, Assistant to the President, The Stanley Foundation

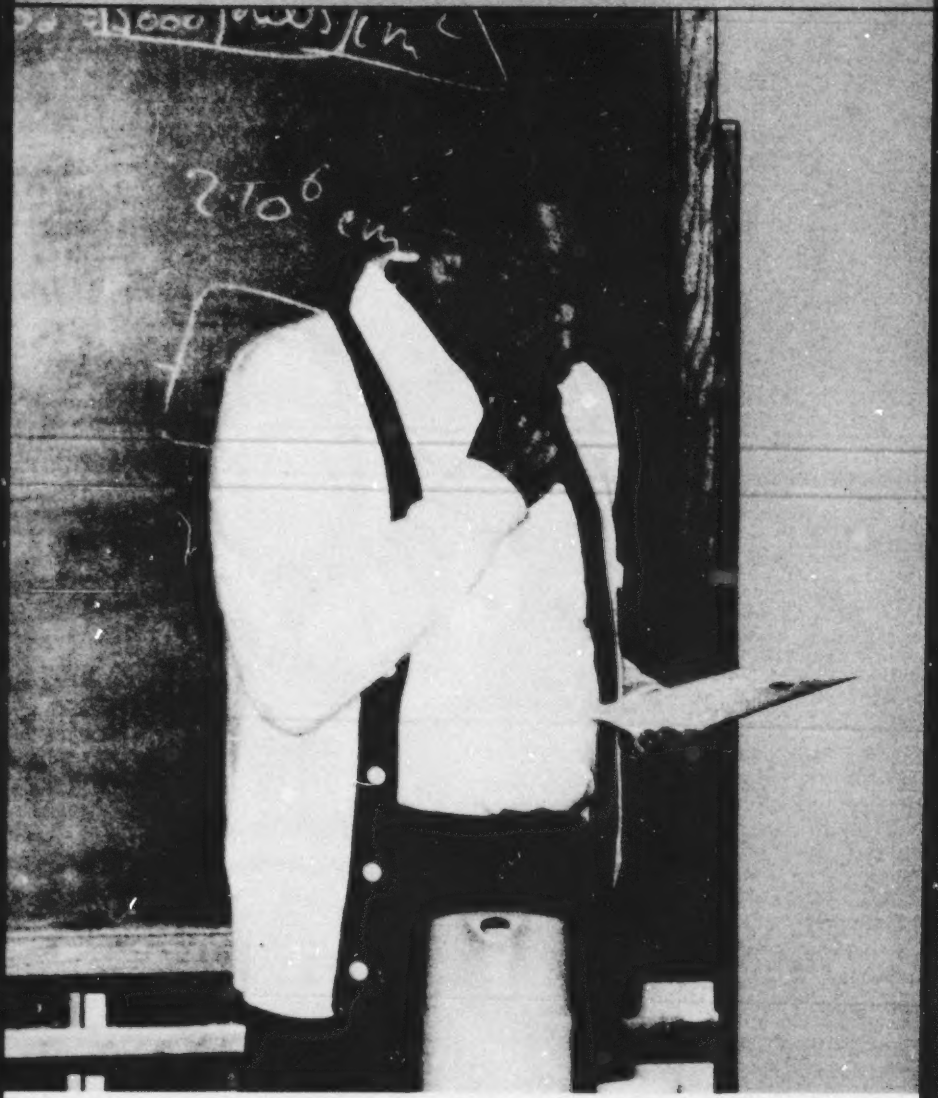
Conference Staff

Susan Koehrsen, Associate Director, The Stanley Foundation

Minnetta Davis, Office Manager, The Stanley Foundation

Affiliations are listed for identification purposes only. Participants attend as individuals rather than as representatives of their government or organization.

Chairman's Statement



C. Maxwell Stanley
President, The Stanley Foundation

Maintaining Peace in Outer Space

Four years ago our Thirteenth Conference on the United Nations of the Next Decade considered "Cooperation or Confrontation in Outer Space." Several of you were there. We discussed numerous technical, legal, and political factors affecting the peaceful uses of modern technology in outer space. We examined the current and potential military uses of outer space and their related hazards. We urged holding a second UN conference on outer space no later than 1983.

We meet again just prior to the Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE 82) which convenes in Vienna on August 9. Our topic is "Maintaining Peace in Outer Space." UNISPACE 82 will be our primary focus, but we must look beyond it and consider how the world community can meet the urgent need to better manage both the peaceful and the military uses of outer space.

Our 1978 conference report contains a statement which seems an appropriate charge to this conference, as well as to UNISPACE 82:

> The United Nations and member states should use opportunities afforded by the second UN conference [on space] and its preparatory work to review progress in the peaceful uses of outer space, determine ways in which the benefits of space technology can be brought more fully to all peoples and nations, and take measures to assure that outer space remains a peaceful environment and a part of the common heritage of mankind.
>
> The opportunities and risks are immense. Conference participants urge all nations to utilize and strengthen the mechanisms of the United Nations, and to order their national priorities towards peaceful uses, to the end that peace, order, and equity will prevail in outer space.

Progress

Review of outer space developments in the last four years leads to a disturbing conclusion. Technological progress is outstripping efforts to manage and control outer space by a wide, wide margin.

Technological advances in communication and observation satellites, manned and unmanned space vehicles, space shuttles, antisatellite and other weapons continue

at an amazing rate. Yet little agreement on the legal facets of space matters has been achieved and appropriate international treaties to assure peace, order, and equity in outer space have not been drafted, let alone adopted.

Governments and industries commit huge amounts of money and human resources to apparatus and mechanisms for the peaceful uses of outer space. Development of antisatellite and other space weapons has become part of the arms race between the United States and the Soviet Union; neither money nor human resources are lacking. On the other hand, the resources devoted to strengthening the mechanisms of the United Nations to manage and control outer space are pathetically small. Moreover, most nation states have little interest and less money for space-related matters.

These unpleasant realities need to be in our minds as we begin our deliberations on "Maintaining Peace in Outer Space" and should be uppermost in the minds of the delegates as they assemble at UNISPACE 82.

UNISPACE 82

The first UN conference on outer space was in 1968, a year after the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies was adopted. The United Nations deals with outer space matters in the General Assembly, the Committee on Peaceful Uses of Outer Space (COPUOS) and its Legal and Scientific and Technical Subcommittees, and the Outer Space Affairs Division of the Secretariat.

UNISPACE 82 will be attended by representatives from many nations and from several UN organizations, specialized agencies, and interested intergovernmental and nongovernmental organizations. COPUOS, chaired by Ambassador Peter Jankowitsch of Austria, with the assistance of the Conference Secretariat, led by Professor Yash Pal of India, has served as the Preparatory Committee. The Scientific and Technical Committee, chaired by Dr. J. H. Carver of Australia, and the Legal Subcommittee, chaired by Ambassador Eugeniusz Wyzner of Poland, have discussed and reported on the major UNISPACE 82 agenda items. Many member states have submitted background papers to the Conference Secretariat.

The provisional agenda of UNISPACE 82 emphasizes (1) the state of space science and technology, (2) applications of space science and technology, and (3) international cooperation and the role of the United Nations. This agenda addresses the many ways space science and technology may be used to benefit humankind, taking into account "present and foreseeable national and international programmes."

Issues

UNISPACE 82 will deal with such varied issues and problems as: the use of space technology for education, remote sensing, direct broadcasting, meteorology, communication, navigation, and transportation. In addition, the use of manned space stations for manufacturing, research, and solar power generation will be discussed. Problems related to the geostationary orbit and safety in outer space will be considered. The role of the United Nations in the peaceful uses of outer space will be discussed with emphasis on assuring benefits of outer space to all nations, whatever their stage of development.

All of these agenda items are important. They have been the subject of ongoing study by COPUOS and its two subcommittees. UNISPACE 82 provides the opportunity to increase consensus on both the technical and the legal aspects of these matters. Because you are well aware of the background of these issues, I will forego further comment on them and focus my remarks on one important issue missing from UNISPACE 82's agenda and on another issue which seems to be inadequately emphasized. The provisional agenda does not address questions concerning the military uses of outer space or ways to prevent space from becoming a future battle area. However, weaponization of outer space will certainly be raised in the general debate. If outer space is to remain peaceful, weaponization must be dealt with forthrightly.

I believe that management of outer space is inadequately emphasized in the UNISPACE 82 agenda. Examining the future role of the United Nations in the context of international cooperation is not enough. Outer space management deserves more attention.

Outer Space Weaponization

The research programs of the United States and the

Soviet Union are propelling the world c[illegible]er and closer to the realization of space warfare emulating the computerized electronic games which are such a rage today. The message is clear: prevent weaponization of outer space now or forever rue the failure to do so. There is no greater threat to the peaceful use of outer space.

Some military uses of outer space can add security and reduce the likelihood of a major war. Both the Soviet Union and the United States use satellites for early warning against nuclear attack, for communication among military units, for navigation, and for gathering intelligence regarding each other's military activities. Satellites are essential to the national verification systems the superpowers use to monitor each other's conformance to arms limitation agreements. Such uses of outer space are largely beneficial.

Moreover, greater use of satellites for verification of future disarmament measures is inevitable. The world must, if it is to survive, progress towards general and complete disarmament—the ultimate objective stated in the Final Document of the UN's First Special Session on Disarmament. This will require international, as well as national, verification mechanisms including satellites.

The potential military uses of outer space—armed space stations, weapons in fixed orbit, antisatellite weapons, and ground-based and space-based laser and particle beam weapons—are frightening. Both the United States and the Soviet Union are committing vast amounts of human and financial resources to research, develop, and test these weapons. The impressive US space shuttle program has been largely taken over by the military. In the words of Dr. James Van Allen, "The military use of the shuttle is going to dominate while civilian uses will be minor." No doubt there is a comparable military domination of the Soviet space vehicle program.

Resolution 1962, unanimously adopted in 1963 by the 18th UN General Assembly, called on all states to refrain from introducing weapons of mass destruction into outer space and welcomed Soviet and US statements renouncing such intentions. The 1967 outer space treaty broadened these principles and banned the stationing of nuclear and other weapons of mass destruction in outer space and forbade the use of the

moon or other celestial bodies for military bases, weapons tests, or military maneuvers.

The time has come to build on these historic measures and seek early agreement:

—to prohibit the testing, deployment, and use of space-based or ground-based weapon systems designed to damage, destroy, or interfere with the functioning of the spacecraft of any nation and

—to prohibit the stationing in orbit, on celestial bodies, or elsewhere in outer space of weapons designed to inflict injury or damage on the earth, in the atmosphere, or on objects launched into space from earth.

Such prohibitions should be formalized in an extension of the outer space treaty or a new treaty.

Until recently, the United Nations had little reason to be concerned about militarization of outer space. The threat of weaponization has changed everything. How can UNISPACE 82, or any other gathering concerned with peaceful uses of outer space, avoid confronting the mounting threat of weaponization?

Outer Space Management

Policy, space law, and machinery are necessary to adequately manage outer space. Policy is well stated in Resolution 1962 and the outer space treaty. Outer space is to be used for the benefit of humankind in the interests of peace and international cooperation.

Establishing international space law consistent with this objective requires treaties or conventions. In addition to the 1967 outer space treaty, four other UN documents codify some facets of outer space law: the Agreement Regarding Rescue and Return of Astronauts and Objects (1968); the Convention Regarding International Liability for Damage Caused by Space Objects (1972); the Convention on Registration of Objects Launched into Outer Space (1976); and the Agreement Concerning the Activities of States on the Moon and Other Celestial Bodies (1979).

Despite these encouraging beginnings, much remains to be done. Early definition and/or delimitation of outer space is critically needed. Principles of law governing such issues as geostationary orbit, remote sensing, direct television broadcasting, and outer space safety

must be developed. Legal principles will be needed to govern space stations. The need to supplement the 1967 outer space treaty with provisions to prevent weaponization has already been mentioned. With the exception of weaponization, these matters are being dealt with by COPUOS and its Legal Subcommittee, but the process should be expanded and accelerated.

Machinery, including institutions and procedures, is essential for the increasingly complex task of managing outer space. There is a common tendency to underestimate the importance of machinery and to assume that once there is national will, outer space management will take care of itself. However, even the implementation of the agreed space principles requires adequate machinery and the codification of outer space law would be significantly aided by stronger UN machinery.

Currently, UN management of outer space is handled by the small, inadequately financed Outer Space Affairs Division of the Secretariat, although other units of the Secretariat—the UN Centre for Natural Resources, Energy and Transportation, and the UN Office of Science and Technology—are somewhat involved. In addition, a number of UN-affiliated organizations are involved in various facets of outer space: the International Telecommunication Union (ITU); the World Meteorological Organization (WMO); the United Nations Educational, Scientific, and Cultural Organization (UNESCO); the Food and Agricultural Organization of the United Nations (FAO); the International Civil Aviation Organization (ICAO); the Inter-Governmental Maritime Consultative Organization (IMCO); the International Bank for Reconstruction and Development (World Bank); and the International Atomic Energy Agency (IAEA).

In 1978 our conference participants concurred that the Outer Space Affairs Division should be strengthened and provided with increased staff and greater budgetary support. They were also concerned with the adequacy of coordination of the various UN-affiliated organizations. Should not UNISPACE 82 strongly endorse strengthening of the Outer Space Affairs Division and improving coordination among involved agencies?

Machinery to help prevent weaponization of outer space should be another concern of UNISPACE 82. Must COPUOS continue to maintain a hands-off policy,

leaving this subject to the whims of the superpowers and the UN multilateral disarmament mechanisms? How may UN machinery deal more effectively with the military aspects of outer space? What linkages should be built between the historic emphasis on peaceful uses of outer space and arms control and disarmament?

Looking further ahead, as is appropriate for a conference dealing with the next decade, is it not time to seriously consider establishing a UN outer space agency? The world community is addressing the problems of using the oceans and must similarly protect outer space as our common heritage. Ultimately, there must be a body of outer space law codified by treaties to govern all uses of outer space. Must there not also be an agency having sufficient autonomy, authority, and financial support to administer outer space law and handle the operational facets of managing outer space? An outer space agency could perform many of the functions now handled by the Outer Space Affairs Division and assume some of the functions handled by specialized agencies. UNISPACE 82 would do well to prepare for the creation of such an agency.

Obstacles

With rare exception, national leaders desire peace, order, and equity in outer space. Why, then, is the world community so slow to take the necessary steps and forge the required machinery to ensure that these ends are achieved? I suggest four reasons, each of which constitutes a major obstacle to outer space progress.

One reason is the inadequacy of knowledge and understanding of outer space technology. Most nations fail to appreciate its enormous potential benefits, the complexities of using it, and the hazards of failing to act promptly to control and manage it. The result is that outer space is not considered a high-priority item.

The traditional pattern of completely separating peaceful uses and military uses when dealing with outer space is a second obstacle. The major military powers encourage this practice; military uses are viewed as bilateral rather than multilateral issues. So far, the world community has tended to accept this view.

Undue concerns for national sovereignty is a third reason, one that constitutes a mighty obstacle to progress on outer space matters. Nation states are deeply locked into the concepts and the protocol of the

centuries-old nation state international political system. They are reluctant to accept international guidance and management of outer space activities. They find it hard to make necessary compromises and harder still to give up perceived near-term gains to their own country in favor of the longer-range advantages and benefits to all nations that would arise from effective outer space management.

The final reason is the lack of sufficient dynamic and progressive leadership capable of accelerating progress on outer space matters. Strong, effective, and innovative leadership is essential if the other obstacles are to be overcome. A more forceful constituency for such leadership is needed.

Criteria for Success

UNISPACE 82, as the largest gathering of representatives of nation states and international organizations concerned with outer space, will provide a unique opportunity to stimulate efforts to manage outer space for the benefit of humankind. Provided it surmounts the obstacles now impeding progress, UNISPACE 82 should enhance interest, crystalize policy, and stimulate action. What must happen if UNISPACE 82 is to be considered a success? I suggest four criteria for making this judgment.

First. Will UNISPACE 82 substantially increase consensus on the scientific, technical, and legal problems associated with the issues COPUOS and its subcommittees have studied for years?

Second. Will UNISPACE 82 stimulate multilateral, as well as bilateral, action to prevent weaponization of outer space?

Third. Will UNISPACE 82 set the stage for strengthening and enlarging UN machinery to manage both the near-term and long-range problems of outer space?

Fourth and most basic. Will UNISPACE 82 impress nation states with the urgency of intensifying efforts to manage outer space and broaden both governmental and nongovernmental constituencies supporting such efforts?

Success will be measured by action, not rhetoric.

Conclusion

Today outer space is the world's last common heritage. It is infinite and eternal. Humankind will gain the greatest benefits from outer space if it is placed securely under global control. Care must be taken lest outer space suffer a fate similar to that of ocean space—a sadly depleted heritage. Unlike the oceans, segments of outer space have not been claimed by nation states. Unlike the oceans, outer space has neither a long history of use nor important known resources currently vital to the economies of nation states.

Nevertheless, nation states are chipping away at this common heritage. They cannot agree on the definition or delimitation of outer space. The United States and the Soviet Union want to deal bilaterally with the military aspects of outer space. Equatorial states want to assert sovereign rights in connection with the geostationary orbit. Industrial nations want a free hand in the future exploitation of the resources of the moon.

Now is the time to firmly and legally establish outer space as a common heritage of the world community. Lethargy and delay will allow the opportunity to escape. Significant progress on policy, law, and machinery must be maintained and further action must be sound.

May our deliberations here produce ideas and recommendations for UNISPACE 82 that will contribute to more effective management of outer space in the common interests of mankind.

Rapporteurs' Report

Jeff Martin

Anita DeKock
Rapporteurs

The rapporteurs prepared this report following the conference. Participants neither reviewed nor approved the report, therefore, it should not be assumed that every participant subscribes to all recommendations, observations, and conclusions. The views contained are not necessarily those of the Stanley Foundation.

Maintaining Peace in Outer Space

Introduction

To the people of Cooperstown, New York, as to most people around the world, space is a television adventure story. Every few months astronauts and cosmonauts are sent into this vast vacuum to conduct experiments, play games, and eventually return triumphantly to earth. Television brings the drama to our homes.

To the participants at this conference, however, space is a challenging field of interest because what has happened between those TV spectaculars is, in a way, a much more exciting story. Scientists, by applying the lessons they have learned from operating in space, have developed space assisted systems to improve communications, aid navigation, predict weather, gather scientific data on earth's processes and condition, and much more. Few Cooperstown residents are aware of the extent to which they live in a space assisted world.

Coincidentally and inevitably, the advances in space technology have raised new, previously undreamed of, controversies between peoples and nations on earth. Space offers great opportunities to improve the human condition; it also presents new dangers.

The problems which divide nations on earth are compounded when extended to space. By itself space technology does nothing to alleviate hunger, to reduce the disparity between rich and poor nations or rich and poor people within nations, or to lessen the chances of war. By providing a new vehicle, it does, however, offer the opportunity for nations to work together on new approaches to these problems.

How will the world community respond to space? Will cooperation toward peaceful and constructive ends be the predominant mode of operation? Or will confrontation be the order of the day? Will space become just another battlezone, another theater of operations in which nations continue to fight over their differences rather than emphasize their common rights?

The United Nations long ago established two units to

encourage a course of peaceful cooperation. They are the Committee on the Peaceful Uses of Outer Space (COPUOS), a committee of the General Assembly, and the Outer Space Affairs Division (OSAD), a unit of the Secretariat. COPUOS has been preparing for a world conference on peaceful cooperation—UNISPACE 82—to be held in Vienna, August 1982. Participants at this Stanley Foundation conference applaud COPUOS and OSAD for their efforts and for the remarkable degree of consensus they have achieved as they start the conference.

Efforts to encourage peaceful cooperation must not end with UNISPACE 82. The probability that weapons will be placed in space looms larger everyday. Participants gathered in quiet little Cooperstown to consider how cooperation in space can continue beyond UNISPACE 82, how space can avoid becoming a battlezone, and how the United Nations can help achieve these ends.

Recent Technological Developments

Participants expressed concern that advances in space science and technology are rapidly outstripping international efforts to manage space. Among the more recent developments cited were:

1. Advances in sensor technology. Charged coupled devices deliver high resolution images fast and at relatively low cost.
2. Development of low-noise amplifiers. These units amplify and thus make useful weak radio signals from space. Weak signals might come from distant space vehicles or lower powered satellites which are more affordable for developing countries.
3. Space shuttle technology. Reusable launch vehicles should, in the long run, reduce the cost of space transport.
4. Plans to launch a space lab. This European-produced capability planned for 1983 launch will enable mission specialists to conduct experiments in space.
5. Development of launch capabilities and increased space applications to more countries.
6. Development of the ability to locate and track space junk—debris shed by launch vehicles or spacecraft.

Such capability may become essential to the safety of continued manned or unmanned space flights.

7. New techniques and new applications of technology in astronomy, including the use of Very Long Baseline Interferometry and the greater visibility of the 2.4 meter space telescope, may produce new and remarkable discoveries.

While acknowledging the hazards of making predictions, individual participants, looking to the next decade and beyond, anticipate:

1. Large space stations.
2. Space manufacturing.
3. Solar power from space.
4. More sophisticated data processing conducted on board spacecraft.
5. More efficient use of the radio frequency spectrum.
6. Improvements in existing technologies to make space data available to more nations and their people at a lower cost.

Despite the rapid improvements in technology, some participants worried that great opportunities for scientific advancement may be missed because resources devoted to purely scientific research are drying up. Several participants said that nations are becoming insistent upon the need for near-term commercial benefit before investing in space science research; only military space programs escape economic justification. More money is now being spent on military space efforts than on civilian programs.

Most participants agreed that international cooperation on space projects can make them more economically viable. For example, Canada has benefitted from participation in the US space shuttle. The European Space Agency has developed its program using a mix of assessments and contributions from member nations to finance programs like the Orbital Test Satellite (OTS) and the European Communication Satellite (ECS). This collaborative approach made the programs economically feasible. Similarly Intercosmos has stimulated space and science development in Eastern European countries where the economies of individual nations probably would have prohibited space research. These are just a

few examples of cost savings through cooperation. Paradoxically, several participants worried that future cooperative efforts could be inhibited by individual nations' increased emphasis on near-term payoffs. Such emphasis, it was suggested, raises proprietary interests. As a result governments which are convinced of an economic payoff for a particular space program might ask, "If it's that commercially attractive, do we really want to sell it?" Thus, one incentive for space cooperation could be diminished.

International Cooperation for Peaceful Uses of Outer Space

All countries should strive to foster cooperation in the peaceful uses of outer space. Indeed UNISPACE 82 is being convened to further that goal. Years of work have gone into preparation of the draft report; it is hoped that its numerous recommendations will be adopted at the conference. UNISPACE 82 should act as a catalyst to inspire further cooperation in the interests of maintaining peace and extending the benefits of space technology to all humankind.

The convening of UNISPACE 82 is seen as a remarkable achievement given what most participants consider to be a deteriorating world political climate. The tensions between East and West are well known. North-South frictions are also high, and in the realm of space there is a struggle for technologically disadvantaged countries to keep up with the advances of the space powers. Some participants suggested that multilateral approaches to many world problems are increasingly under attack.

It was once hoped that exploring space would lead to development of a broader world view, that men and women would be able to see the commonality of their origins and interests by looking down at the planet from on high. To some it appears that space technology has actually widened the gap between have and have not nations. Indeed the charge was made that developing nations get little more than a "trickle down" effect from the applications of space technology.

Not all participants agreed on the degree to which cooperating in space is a problem. One suggested that it should not be cast as a crisis. This participant noted that the world community faces numerous difficult issues

and that space issues have, in many ways, been handled better than most. However, there was agreement that improvements need to be made.

General Principles

Throughout discussions on cooperation and the peaceful uses of outer space several themes emerged:

1. Space technology moves ahead rapidly while the world community's efforts to cope with the changes wrought by technology seem to advance at a snail's pace.

2. Space technology is a tool. It is means to accomplish any number of ends, not an end in itself. Thus, all nations, especially developing ones, are well advised to consider whether space is always the best, most economical vehicle for accomplishing their objectives.

3. The cost of more sophisticated technology is high. Furthermore, space powers are pressing to make their space systems approach economic self-sufficiency. The costs of operating these systems will increasingly be passed on to users.

4. In some parts of the world, the private sector is becoming more and more interested in providing space services. However, it was noted by several participants that some functions may never have profit potential. In those cases governments or appropriate intergovernmental organizations should be prepared to provide the services which they feel are necessary.

5. Space technology is only as good as the ability of the people on the ground who use it. The need to train personnel in the use of space systems especially in developing countries was consistently urged.

6. Space technology must be put to use in improving the human condition. If information relayed by satellites to earth stations never gets beyond the few people who man those stations, it will have done little to make the world better. Thus, it is mandatory that the leaders of developing nations assess the potential uses of space technology for their countries and consider the need for the infrastructure which can carry the space relayed information to larger sections of the population. It is the world community's responsibility to help develop the infrastructure.

Space technology is applied to earth in many ways. Examination of specific uses of this technology illustrates the potential for international cooperation and the obstacles to achieving it.

Geostationary Orbit

Technology related to the use of the geostationary orbit (GSO) is advancing rapidly as is the use of the orbit. The geostationary orbit is that altitude above the equator at which satellites appear to be fixed in place above a spot on earth. It enables continued relay of a signal from a point on earth to the satellite and back to a wider area on earth.

At one point the issue of sovereignty was a major obstacle to achieving agreement on the use of the GSO. However, as a result of growing confidence that they will not be denied access to the GSO and that they will realize benefits from the space programs, the equatorial states have lessened their claim of sovereignty. Clearly, the GSO requires special treatment and must be managed and used in an equitable manner.

The major remaining issues concern crowding. Physical crowding of the orbit is not yet a serious problem but could become one if ignored. Frequency crowding in the GSO, especially in the Western Hemisphere, is much more acute. This type of crowding occurs when too many radio signals whose frequencies are close together share too little space. The result is interference. Participants agreed that some compromise between a first-come, first-served appropriation and assigned allocations of the orbit to individual nations would be most desirable.

It was suggested that future technological development might make it possible to alleviate both kinds of crowding. Among the developments might be use of other orbits in some applications and expanding and more efficient use of the radio frequency spectrum. However, these changes would require new technology which would likely prove prohibitively expensive for most developing countries. Some thought that perhaps the more affluent developed countries should use the newer more expensive technology, leaving the less sophisticated but wholly adequate technology for developing countries. Others argued against this point citing the incredible cost of changing ground systems to conform to use of new methods in space. All agreed that

long-term projection of the demands on the GSO would facilitate planning and, it is hoped, head off potential problems.

Direct Television Broadcasting

Direct television broadcasting by satellite (DBS) involves transmission of television pictures by satellite directly to individual dish antennae linked to receivers. In some countries it is considered a potentially important tool for delivering educational material to people in remote places.

For more than ten years the Legal Subcommittee of COPUOS has been working to thrash out thorny issues raised by this technology. All but one have been negotiated in a compromise package. Still in contention is the statement of principle over whether there should be free flow of information across national borders or whether nations broadcasting into other countries should receive prior consent from the recipient nation's government.

The International Telecommunication Union's (ITU) allocation of sections of the radio frequency spectrum to individual nations places practical restrictions on transnational DBS. However, some nations, while accepting the need for these practical limitations to avoid anarchy in the radio frequency spectrum, are not willing to accept a general legal principle setting out restrictions. They express concern that such a principle would apply to "spillover"—i.e., the unintentional flow of a signal broadcast within the initiating country to its neighboring nations. Advocates of free flow argue that accepting a principle enunciating prior consent constitutes censorship and would give other nations the right to control even what they transmit in their own countries. On the other hand, supporters of prior consent worry about the effects of rich space powers spreading their values and selling their products in other countries via DBS. They assert that some control must be exercised over what is broadcast into their countries.

COPUOS and its Legal Subcommittee are stymied in their efforts to articulate a general principle on this issue. If consensus cannot be reached soon the matter may be put to a vote of the General Assembly this fall. Participants thought such a vote should be avoided and efforts to reach a compromise redoubled. However,

there were mixed views about the likelihood of attaining a compromise and some participants were more determined than others to press the issue at the General Assembly.

Remote Sensing

The potential benefits to be gained by using data gathered through remote sensing are enormous but the problems blocking realization of their potential are perhaps equally large. Remote sensing data are used in a variety of fields: agriculture, forestry, geography, geology, hydrology, meteorology, and oceanography. The problems are technical, organizational, and political and in many cases are inextricably interrelated. There are debates over who should be allowed access to data and in what form it should be made available. Clearly, sensing nations will have the data. Should they make both raw and processed data available to the sensed states? What about third party nations? Who is to decide how much and what kind of data they receive?

Security issues further complicate matters. The ability to focus on smaller and smaller areas from space with a high degree of clarity makes some remote sensing data potentially useful to the military and so sensed nations are concerned about release of that material to possible adversaries.

In the organizational realm, many people see a need to establish regional organizations through which nations can share data. This could help alleviate the rapidly escalating costs of obtaining data—especially processed data. Within countries, particularly developing countries, infrastructure is needed to move the data from earth stations to the people who can use it.

In the technical area there is concern about compatibility and comparability. Many long-range scientific studies require analysis of data collected over a number of years. Changes in technology might provide data which is inconsistent and difficult to compare. A related problem is that newer satellites might have equipment that makes older earth station gear obsolete thus forcing the earth station operator to reinvest in expensive new equipment. It was suggested that many of the problems stem from the fact that no one readily identifiable body of users exists for remote sensing data. The users of remote sensing data are scattered over a number of disciplines and do not form a cohesive unit with identical

needs. In contrast, a well-organized communications industry exists and is able to articulate its needs and concerns with reference to space technology.

Several participants supported establishing a user controlled and financed international organization to operate a global sensing system. It was argued that such an agency could resolve most organizational problems and alleviate some political difficulties by virtue of having both sensed and sensing nations in the same unit.

Others argued that the desirability of such an organization is still questionable, the practicality of getting the diverse users together is in doubt, and in any case the political climate is not right for such an ambitious undertaking. One suggested alternative was a global information center—a bank into which remote sensing data could be deposited and retrieved.

Nuclear Power Sources in Space

Nuclear Power Sources (NPS) are used in spacecraft not only for propulsion of the craft or generation of energy but also in minimal amounts for experimentation. The use of nuclear power is as controversial in space as it is on earth. The primary concern centers on problems created if and when these craft return to earth.

Participants agreed that the use of NPS in space is an area where the United Nations has responded well. The Cosmos 954 incident in which a Soviet satellite carrying 100 pounds of high radioactive uranium 235 descended from earth orbit was cited as an example. This was the first claim under the aegis of the liability convention and a negotiated settlement was reached between Canada and the Soviet Union to partially cover the costs of search, recovery, and cleanup.

Most participants agreed that early progress is possible in several areas: registration, notification, search and recovery, and after the fact assistance.

Safety is the major and overriding concern with the use of NPS in space. Most thought that the use of NPS in low orbits posed much greater risks than their use in high earth orbits. The distinction, however, between high and low earth orbits has yet to be determined.

A few argued that the balance of benefit and risk does not justify the use of NPS in low earth orbits. Others, however, thought that requiring a country to meet a

direct benefit to risk standard is unreasonable and would in effect outlaw the use of NPS is space.

Many believed that there was a need for international regulations to control the use of NPS. Several participants drew a parallel to the fact that there are guidelines for the use of nuclear power on earth and felt that the International Atomic Energy Agency (IAEA) might have a role in monitoring the use of nuclear power in space. Verification was cited by several participants as a major obstacle to establishing guidelines.

Several questions on the use of NPS remain unresolved:

1. Although a registration convention exists, it is honored in only a minimal way. How could this convention be improved so that more useful information is on file in case of an incident?

2. In the area of search and cleanup—
   Should the affected state have the right to choose who will do the cleanup?
   If so, who is to pay the costs of search and cleanup not conducted by the launching state?

Suggestions were offered on ways to alleviate some NPS problems.

1. Require relocation of NPS satellites to higher orbit when their mission has been completed.

2. Encourage acceptance of a standard relating the orbit life of a satellite to the radioactivity half-life of its NPS. This would mean that satellites would stay in orbit until well after the NPS had lost much of its radioactivity.

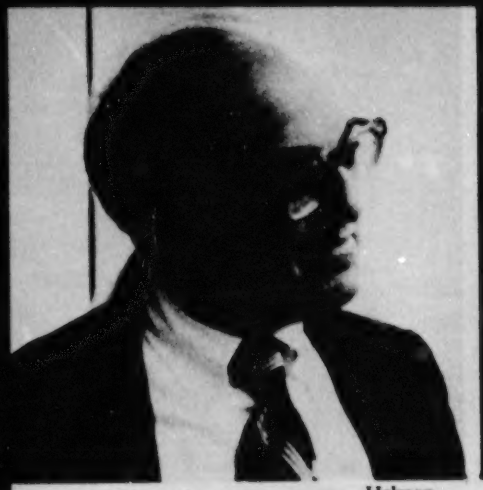
3. Encourage the use of NPS only when other power sources are not available.

4. Require launching nations to provide the earliest possible warning to other countries when it is known that an NPS satellite will descend from orbit.

Navigation

There was clear consensus that navigation satellites are extremely valuable for a variety of uses, not the least of which is assuring safety at sea.

Presently countries avail themselves of the navigational satellite systems of the Soviet Union and the



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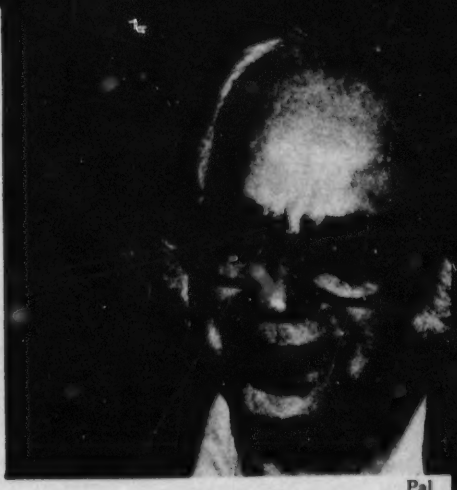

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United States. The United States is in the process of introducing a highly sophisticated and very expensive global positioning system, NAVSTAR, that will have both military and civilian uses.

The major issue surrounding the use of navigation satellites is continued ready access to the systems at no or low cost. Assured access can be called into question by the dual military/civilian nature of the existing systems. Further, the movement to make satellite systems cost effective raises the question of whether some users could afford to use the system even if access were guaranteed.

Some participants suggested that if developments warrant, an internationally controlled navigational system could be created. It was noted that if the need for an alternative ground positioning system were demonstrated the International Maritime Satellite Telecommunications Organization would consider establishing such a system in its second generation satellites.

General Recommendations

In matters related to space, as in other issues, national interests are too often defined with little regard to the interests of the world community as a whole.

UNISPACE 82 offers the opportunity to break out of that pattern, to consider the needs of the whole world as they relate to space. Participants urged nations to seize this opportunity. There was also clear consensus that UNISPACE 82 should not be the end of the road, but rather a starting point for rededicated efforts to realize the potential benefits of space. Many suggestions were offered for UNISPACE 82 and beyond:

1. All nations should assess their national needs and priorities regarding space. In 1985 and 1987 the International Telecommunication Union will hold a world conference at which time allocations of the radio frequency spectrum with regard to the geostationary orbit will be determined for the next twenty years. All space technology involves the passing of electronic information between satellites and earth and therefore is within the realm regulated by the ITU. Some say this will be the most important space conference of this century. UNISPACE 82 should urge delegates to carry home the message that now is the time to begin planning for the ITU conference.

2. Governments need to devote more resources to peaceful uses of space. Perhaps UNISPACE 82 can act as a springboard for inspiring governments to devote more money and manpower to the possibilities of cooperation in space.

3. Further study should be made of how advanced technology can be used to meet simpler needs. Specifically there was a call for more research into how low-powered satellites can be used more effectively. Low-powered satellites clutter the radio frequency spectrum less and are more affordable to developing nations.

4. More attention should be devoted to controlling space junk. UNISPACE 82 should encourage the design of launch and space vehicles that leave less debris.

Preventing Weaponization of Outer Space

Participants acknowledged that space is now militarized but drew a distinction between militarization and weaponization. It was agreed that space is already used by the military for sensing, navigation, communication, and similar uses which serve to amplify the capabilities of ground forces. This was seen as an irrefutable and probably irreversible fact of life. Furthermore, it was noted that surveillance satellites serve to enhance international security by providing early warning and a means of verifying disarmament treaty compliance.

For purposes of discussion a definition of space weaponization was advanced. Weaponization of space includes the placement of kill mechanisms in space or the practice of hostilities beyond the earth's atmosphere. Most agreed that full scale weaponization has not yet taken place but that it is rapidly drawing closer to reality. Now is the time to halt plans for weaponization before a threshold is passed and the world is confronted with space weapons which the military powers will then be unwilling to negotiate away. A few participants, however, questioned the urgency of the situation.

Emerging Weapons Technology

Both superpowers are developing antisatellite weapons (ASATs). ASATs are intended to damage or destroy a target satellite. It is generally known that two types of mechanical ASATs are being developed. One such sys-

tem involves placing an attack satellite in orbit next to a target satellite and then exploding the attack device. Another mechanical ASAT is launched from a rocket mounted on a fighter jet. The jet fires the rocket into space and the rocket in turn carries a device which homes in on the target satellite and collides with it, knocking the target satellite out of orbit or otherwise damaging it. These two systems are in various stages of development. Currently only low orbiting satellites can be hit by them but it was suggested that given enough time and money either of these systems could be developed for attacking targets in higher orbits as well.

Research is also continuing on the antisatellite capabilities of particle beams and lasers. These exotic technologies face enormous and possibly insurmountable scientific and technical problems. It was suggested that these weapons are still decades away from possible deployment. Some participants then reasoned that efforts to control weaponization of space should focus on the more near-term threats posed by mechanical ASATs. Others argued that while lasers and other exotic technologies may not look promising now there is still considerable research being done on them and current seemingly insurmountable problems might be overcome sooner than expected.

The disagreement by some participants over the timing of development for lasers and other exotic space weapons should not overshadow their basic accord on the need to quickly begin negotiating agreements to prevent weaponization of outer space. However, a few participants did not think the need for negotiations is urgent. They thought that since practical use of weapons in space is still sometime off, negotiation of agreements to limit these devices must take a back seat to higher priority arms control discussions.

Effects of Weaponization

Most participants agreed that weaponization of space would prove extremely costly in a number of ways. Extending the arms race to outer space requires devoting enormous sums of money to weapons development and deployment. A space arms contest, like its earthbound counterpart, diverts resources for improving human services to development of new ways to kill and destroy.

No one could deny that making early warning and

surveillance satellites vulnerable to attack would be highly destabilizing. Some suggested that space weaponization might require hardening of civilian and military satellites. If satellites had to be hardened to make damaging them more difficult it would add to the cost of the satellite and the added weight would limit the cargo the satellite could carry. It was stated by one participant that the US government sees hardening of satellites as a real possibility and has displayed a willingness to pay for it in at least one instance.

Many believed that another effect of weaponization would be to curtail peaceful uses of space. It was argued that developing countries especially, when confronted with the expense of hardening a satellite and the fact that no guarantee could be made for its invulnerability, would likely curtail their use of space. Other participants pointed out that weaponization of space would force nations to maintain terrestial systems to back up their systems in space. The expense of maintaining dual systems would be a strong impediment to continued use of space.

The Arms Control Alternative

Earth and space are linked; most people feel hostile acts in space could never be limited to that domain. In addition, the adverse political climate slowing disarmament on earth similarly hampers efforts to prevent space weaponization.

Most participants agreed on the urgency of taking steps now to prevent deployment of weapons in space. They believed that the introduction of weapons in space is rapidly approaching and that preventing weaponization of space is more easily accomplished than removing them once they are in place. Furthermore, it was suggested that achieving a space related arms control measure would be psychologically significant and could have a beneficial effect on other disarmament efforts.

Multilateral Avenues. The multilateral approach to disarmament is gaining importance and participants felt that multilateralism should be applied to space weapons control as well. The world should not wait for the superpowers to deal with these issues.

Weapons in space are the subject of two treaties already negotiated at the United Nations. The outer space treaty carries some prohibitions but it was noted that

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John Martin

there are serious loopholes. The moon treaty which prohibits weaponization of the moon and other celestial bodies was completed in 1979. Although it has some signatories, no states have ratified it—therefore it cannot take effect. The temporary shelving of the moon treaty was seen by many participants as a serious setback to preventing space weaponization.

The failure of the United States' executive branch to submit the moon treaty to the Senate for ratification was cited by many participants as a principal obstacle to the world community's acceptance of the treaty. Several participants thought the treaty's designation of the moon as "the common heritage of mankind" raised philosophical opposition in the United States at a time when "common heritage" relating to Law of the Sea is an emotional issue. Several participants expressed optimism that given time the moon treaty would finally gain acceptance and take force.

The proper forum for negotiating multilateral disarmament agreements relating to space is the subject of some controversy. Currently, the Committee on Disarmament (CD) is charged with this responsibility. While a few participants said that this is the proper forum, others argued that relegating space weaponization treaties to the CD assured that nothing would happen because of the CD's already crowded agenda.

Bilateral Avenues. There was consensus that a bilateral approach to preventing space weaponization should coincide with the multilateral efforts. It was noted that the United States and the Soviet Union in the late 1970s were engaged in negotiations on a treaty to prevent antisatellite weapons. Those negotiations were halted in 1979.

One participant drew a distinction between *dedicated* ASATs—those that are built purely as weapons—and *ancillary* ASATs—those devices which have nonweapon uses but which could also be used to attack target satellites. This participant drew significant support for a position that while dedicated ASATs must be banned by treaty, the ancillary ASAT could be controlled by less formal means. Evolution of a series of standard practices or "rules of the road" regarding space vehicles could be sufficient to manage the ancillary devices.

Problems. Many obstacles stand in the way of space arms control agreements. Some maintained the need to

accept economic and political realities: research on space weapons creates a great number of jobs and thus impacts on domestic economies.

The most forcefully argued impediment to achieving agreements, however, was the issue of verification. Some felt that because of the size and nature of space it would be extremely difficult to verify compliance with space arms control treaties. A ban on testing might be hard to verify because some techniques might be applied in either peaceful or hostile ways. For example, techniques needed to build stations in space, like coorbiting and rendezvousing, might also be used in development of ASATs. Another group of participants strongly disagreed about the difficulty of verifying compliance. They thought that technology would permit verification and that the verification issue was often advanced just as an excuse for not proceeding with serious arms control.

Dual Paths. Given the dangers posed by weaponization of space, there was strong sentiment for quick resumption of bilateral as well as multilateral arms control talks. There were several suggestions proposed on how to advance space weapons disarmament:

1. Agreements are needed to confirm nonaggression in space and to limit development, testing, and deployment of arms directed against space systems on earth and in space.
2. Many nations are not party to a number of arms control agreements, including the limited test ban, the Non-Proliferation Treaty, the outer space treaty, and the moon treaty, all of which have implications for space. There was consensus that nonparty nations should be pressed to join. This should be done simultaneously with efforts to negotiate new agreements.
3. UNISPACE 82 is an opportunity to raise the issue of space weaponization. While there was consensus that the focus of the conference should not be directed away from the peaceful uses of space, discussion of the threat posed by weaponization was deemed mandatory by all but a few participants.
4. The CD and COPUOS should meet jointly to discuss weapons in space. There was consensus that such a proposal would speed up the negotiating process.

5. The General Assembly should consider ways to strengthen machinery—even to the point of establishing a special group—to deal with disarmament in space.
6. Bilateral talks on ASATs and other space weapons should be resumed. It was suggested by some that an ASAT treaty would be successful if it simply put a cap on further developments of these weapons. All nations, especially those friendly with the superpowers, should press them to return to the negotiations.

Future Role of the United Nations

Most participants agreed that the technical obstacles to peacefully using outer space would be more quickly overcome than either the political or the institutional problems. With that in mind they turned their attention to ways to improve the efficiency and effectiveness of the United Nations both now and in the future. All participants agreed that COPUOS and its Legal and Scientific and Technical Subcommittees should remain the focal point of UN activities in space. High marks for efficiency were given to OSAD. In addition to its various functions including servicing the needs of COPUOS and maintaining the register of objects in space, OSAD administers the Programme on Space Applications which sponsors and conducts seminars, panels, and workshops in the field of space applications. OSAD also administers fellowships for advanced training in space science and technology for individuals from developing countries.

Several suggestions were offered on ways to improve the effectiveness of COPUOS, OSAD, and the various specialized agencies that deal with outer space matters.

1. Attempts should be made to reduce institutional rivalries, a problem that exists throughout the United Nations. It is acknowledged that this will be a large task.
2. Every effort should be made to fill vacancies with technically qualified people. Special attention should be given to finding people who have had practical experience in applying space technology.
3. The agendas of the Legal and Scientific and Technical Subcommittees should be examined to ensure that

they support but do not duplicate each other's work.

4. Small working groups, perhaps meeting independently of the Subcommittees, might be useful.
5. The Scientific and Technical Subcommittee needs to be strengthened. The Subcommittee is no longer the premier forum for presentation of scientific research that it once was. Some delegations to the Subcommittee are led by legal or political specialists rather than technical experts. Several suggestions were offered as ways to attract expert scientists to once again become involved in the Subcommittee and its work:
   a. Consider focusing agendas on one or two important issues.
   b. Encourage prestigious scientific organizations such as the Committee on Space Research (COSPAR) or the International Astronautical Federation (IAF) to hold symposia immediately before or after Subcommittee meetings.
   c. Hold less frequent meetings or meetings only when needed. (Some urged continuation of regularly scheduled meetings, suggesting that waiting to meet until after an incident occurred would result in a politically charged atmosphere which might preclude having a productive session or any session at all.)
   d. Consider fresh issues about which something can be done.
   e. Eliminate or reduce general debate. Some suggested presentation of a written report with a five minute oral summary. Others felt information usually given in the general debate might be introduced at appropriate places in the agenda.
6. Most felt the consensus rule used by COPUOS and its Subcommittees, though difficult at times, should continue as the primary way of doing business or be amended only after very careful consideration.
7. Some procedure needs to be established so that when all efforts to reach agreement have failed an item can be removed from COPUOS' or its Subcommittees' agendas.

At present the United Nations provides some regulations, support, and assistance in the peaceful uses of outer space. Some suggested that its role be enlarged to further assist people in developing their own resources to help themselves.

Some participants saw the need at some time in the future for a space agency to monitor agreements and activities in space. Others considered such a proposal unnecessary. In addition it was noted that creating a new agency would be difficult, especially in the short term, because the political climate would make achieving agreement on a charter extremely difficult and because few countries would be willing to provide funding.

Several alternative sources of funding were suggested for increasing the size or improving the effectiveness of space related UN bodies:

1. Devote some funds from the obligatory budget for expanding UN activities instead of using voluntary contributions as has been suggested.
2. Direct some development funds to space affairs since space technology has direct and significant development applications.
3. Let contributions be in kind rather than in monetary amounts, for example, a country could agree to provide a certain number of scholarships or expert studies.

Conclusion

The space age is moving away from the era of spectaculars. Although exciting manned space flights still occur, the more routine applications of space technology to earth systems have a more direct effect on our lives.

Similarly, the space age has moved from an era of seemingly insurmountable technical problems to a time when human, economic, and political issues may pose the greatest impediments to space progress. Chief among these is the lack of national will to assign high priority to managing space matters.

UNISPACE 82 will highlight the potential of peaceful international cooperation in space, but that is not enough. It must not be seen as an end. UNISPACE should inspire governments to devote more time and resources to space. It should challenge them to think hard about how space technology can help meet their national needs and about how they can then work with

other nations to achieve common objectives.

Differences among nations exist over some peaceful uses of space, for example, direct television broadcasting, use of the geostationary orbit, remote sensing, nuclear power sources in space, and navigation. None of the problems are unresolvable if goodwill efforts are made to address them. Such efforts would be facilitated by sometimes thinking of long-term global interests rather than always thinking only of short-term national interests.

Finally, UNISPACE should serve to make nations aware of the growing threat posed by the weaponization of space. Space may not be available as a tool to assist humankind if it is turned into a potential warzone.

UNISPACE 82 must speak forcefully to the need to keep weapons out of space and thus allow international cooperation on peaceful uses to proceed. National delegations must depart from UNISPACE determined to make this goal a reality.

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Chairman's Observations

These observations were prepared by the chairman, C. Maxwell Stanley, following the conference. They reflect discussion, not only at this conference, but also at prior Stanley Foundation conferences.

Transition

Technology has dominated outer space matters since the 1957 Soviet launch of Sputnik. Governmental action, private sector involvement, and public interest have centered on the amazing scientific and technical accomplishments in outer space. This is changing. Although technology is still important, economic, social, and political issues will dominate outer space activities in the next decade. The Cooperstown discussions clearly indicated the increased emphasis on these factors. Should this trend continue, decision-making regarding outer space will become more complex and controversial.

Obstacles

In addition to the several obstacles to outer space progress mentioned in the Chairman's Statement, another stumbling block emerged in our discussions. The negotiation crisis, stimulated by the East-West security confrontation and the North-South economic confrontation, and compounded by the fragmentation of international cooperation, makes it increasingly difficult for nation states to conclude treaties or to enlarge cooperative efforts to achieve common interests. This situation further handicaps efforts to prevent weaponization of outer space and to better manage its peaceful uses.

Scientific Research

Economic and military pressures are curtailing scientific research in outer space. Funding for purely scientific exploration is rapidly disappearing. A better balance is needed.

Human Benefits

Outer space, whether or not it is called a common heritage, is a global province rather than an extension of

national territory. As such, the world community's efforts to manage outer space should be measured by how they benefit the world's people.

All peoples, particularly those of the developing world, who seek to improve their lot should share in the benefits realized from the peaceful uses of outer space. Therefore, now is the time to prevent weaponization of outer space and thus assure its availability for peaceful uses.

Dedicated outer space advocates view space technology as a means to develop a greater sense of commonality and world community. They believe that a peaceful, well-managed outer space will foster peace, order, and equity, not only in outer space, but also on earth. It will indeed be tragic if economic and military pressures are allowed to subordinate the peaceful uses of outer space which can profit us all.

National Will

From the vantage of the chair, the able, interested, and well-informed group of participants expressed a high degree of consensus on outer space matters during the Cooperstown deliberations. Participants generally agreed on the necessary action pertaining to the peaceful uses of outer space. They also agreed that preventing weaponization of outer space is a matter of great urgency even though this topic received but minimal attention and no consensus in the Draft Report to be considered by UNISPACE 82.

The participants knew what should be done to maintain peace in outer space and to assure that its uses are beneficial to the peoples and the nations of the world. Unfortunately, similar consensus does not prevail among the national policy makers who will be called upon to implement the actions recommended by UNISPACE 82. Poorly informed on the benefits to be derived from peacefully using outer space and the hazards inherent in failing to assure peace in outer space, national leaders put off properly managing outer space. No greater challenge faces UNISPACE 82 than to stimulate national leaders to act before it is too late. They must be encouraged to give outer space matters the high priority they deserve. Outer space management will be irreparably retarded unless this difficult act of persuasion is accomplished.

Mary Jo Stanley

Richard Stanley

C. M. Stanley

Elizabeth Stanley

United Nations of the Next Decade

In 1945, representatives of 50 nations signed the United Nations Charter in San Francisco "to reaffirm faith in fundamental human rights...to promote social progress...to unite our strength to maintain international peace and security."

Twenty years later delegates from 114 nations convened in San Francisco to commemorate that event. Upon the eve of that symbolic session, C. Maxwell Stanley gathered respected individuals from 13 nations to discuss the role of the United Nations in the next decade.

Since 1967, similar United Nations of the Next Decade conferences have assembled annually under Stanley Foundation sponsorship. Conference conclusions and recommendations are presented in a conference report which is distributed worldwide.

The selection of conference topics and the high quality of participants have produced recommendations which have been of value to governments and to the United Nations.

Conference sites have been selected to reflect the international dimension of this conference series and to promote personal relationships so important to mutual understanding.

1965 San Francisco, California, USA
1967 Burgenstock, Switzerland
1968 Dubrovnik, Yugoslavia
1969 Quebec, Canada
1970 Fredensborg, Denmark
1971 Sinaia, Romania
1972 South Egremont, Massachusetts, USA
1973 Amalfi, Italy
1974 Vail, Colorado, USA
1975 Baden bei Wien, Austria
1976 Charlottesville, Virginia, USA
1977 San Juan del Rio, Mexico
1978 Iowa City, Iowa, USA
1979 Porvoo, Finland
1980 Woodstock, Vermont, USA
1981 Warwick, Bermuda
1982 Cooperstown, New York, USA

Publications

Outer space is also the topic of the following free publications:

Military Competition in Space. Twenty-Second Strategy for Peace Conference Report. October 16-18, 1981, 10 pp.

Cooperation or Confrontation in Outer Space, Thirteenth United Nations of the Next Decade Conference Report. July 9-15, 1978, 52 pp.

Can Space Remain a Peaceful Environment? Occasional Paper 18. Herbert Scoville, Jr. and Kosta Tsipis. July 1978, 24 pp.

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